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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,231	05/07/2001	Peter Krulevitch	IL-10581	3998
7590	11/30/2005		EXAMINER	SIMONE, CATHERINE A
Alan H. Thompson Assistant Laboratory Counsel Lawrence Livermore National Laboratory P.O. Box 808, L-703 Livermore, CA 94551			ART UNIT	PAPER NUMBER
			1772	
DATE MAILED: 11/30/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/851,231	KRULEVITCH ET AL.	
	Examiner Catherine Simone	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 September 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 11-16 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Withdrawn Rejections

1. The 35 U.S.C. 102(e) rejection of claims 11 and 13-15 as anticipated by Krulevitch et al. of record in the Office Action mailed 6/7/05, Pages 3-4, Paragraph #5 has been withdrawn due to the Applicants amendment/declaration filed 9/1/05.
2. The 35 U.S.C. 103 rejection of claims 12 and 16 over Krulevitch et al. of record in the Office Action mailed 6/7/05, Pages 4-5, Paragraph #7 has been withdrawn due to the Applicants amendment/declaration filed 9/1/05.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Cammack et al. (US 5,574,327).

Cammack et al. discloses an apparatus having a sealed open microchannel therein comprising an etched open substrate (Fig. 1, element 14), an etched open microchannel in the etched substrate (Fig. 1, element 20), an annealed substrate (Fig. 1, element 12) positioned on the etched substrate that covers the etched microchannel in the etched substrate, an annealed open microchannel (Fig. 1, element 22) in the annealed substrate over the etched microchannel in the

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etched substrate, and a bond (Fig. 1, element 16) connecting the etched substrate to the annealed substrate (see col. 6, lines 33-36), wherein the etched open microchannel and the annealed open microchannel comprise the sealed open microchannel (Fig. 1, element 18). Regarding claim 13, the etched microchannel in the etched substrate and the microchannel in the annealed substrate form a circular microchannel (Fig. 1, element 18; also see col. 5, lines 53-60). Regarding claim 14, the etched substrate and the annealed substrate consist of glass (see col. 5, line 67).

Regarding claim 15, the bond comprises fusion or anodic bonding (see col. 6, lines 34-36).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Cammack et al. (US 5,574,327).

Cammack et al. discloses an apparatus having a sealed open microchannel therein comprising an etched open substrate (Fig. 1, element 14), an etched open microchannel in the etched substrate (Fig. 1, element 20), an annealed substrate (Fig. 1, element 12) positioned on the etched substrate that covers the etched microchannel in the etched substrate, an annealed open microchannel (Fig. 1, element 22) in the annealed substrate over the etched microchannel in the etched substrate, and a bond (Fig. 1, element 16) connecting the etched substrate to the annealed substrate (see col. 6, lines 33-36), wherein the etched open microchannel and the annealed open

microchannel comprise the sealed open microchannel (Fig. 1, element 18). Although Cammack et al. discloses an annealing temperature of 1000°C (see col. 2, lines 21-23) and a diameter of <100 micron for the sealed microchannels (see col. 2, line 57), Cammack et al. fails to disclose an annealing temperature in the range of 600° to 800° and the microchannel having a depth of about 10 µm and a width of about 20 µm. Therefore, the optimum ranges for the annealing temperature and the width and depth of the microchannel would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end results. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the annealing temperature in Cammack et al. to be in the 600° to 800° range and modified the microchannel in Cammack et al. to have a depth of about 10 µm and a width of about 20 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

Response to Arguments

7. Applicant's arguments with respect to claims 11-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571)272-1501. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CAS

Catherine A. Simone
Examiner
Art Unit 1772
November 22, 2005


HAROLD PYON
SUPERVISORY PATENT EXAMINER

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11/28/05